

Aggregate Optimization Chart

Production Gradation Report

PLANT #: p11

Contractor: _____

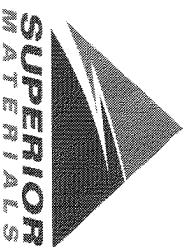
Sample Date: 6/17/24

Concrete Grade: DM, 4500HP

Dates Test Represents: 6/18/2024 through 6/24/2024

MDOT No.: _____

Agg. Class	Pit #	Source	Weight (SSD)	ft ³	Specific Gravity	Contribution %
GAA	71-47	Presque Isle	1405	8.59	2.62	48.4
26A	71-47	Presque Isle	350	2.14	2.62	12.0
2NS	63-115	Ray Rd	1150	6.95	2.65	39.6
Total Wt						17.69
						100.0



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

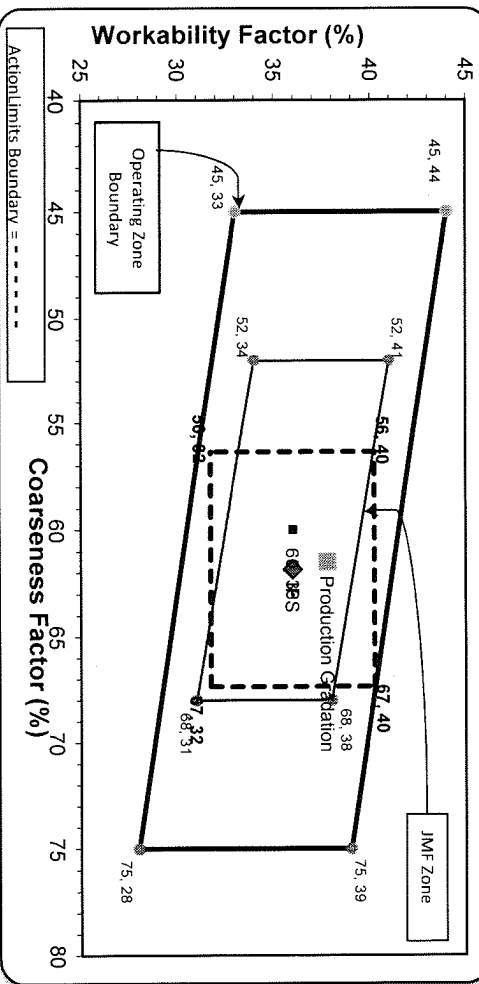
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	95.3	100.0	100.0	97.7	2.3	2.3
3/4"	77.0	100.0	100.0	88.9	8.9	11.1
1/2"	40.9	89.7	100.0	70.2	18.7	29.8
3/8"	24.1	74.5	100.0	60.2	10.0	39.8
#4	4.4	14.4	96.1	41.9	18.3	58.1
#8	2.5	5.2	84.5	35.3	6.6	64.7
#16	2.1	3.5	69.7	29.0	6.3	71.0
#30	2.0	3.0	50.0	21.1	7.9	78.9
#50	1.9	2.6	23.6	10.6	10.5	89.4
#100	1.8	2.4	6.8	3.9	6.7	96.1
LBW	1.6	2.1	1.4	1.6	2.3	98.4

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.
 nom. max., #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when a 1.5" max. size (nom. Max. 1.0") aggregate is used.

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Coarseness Factor: **61** Workability Factor: **35** Adjusted WF: **37.8**

Initial Production Sample (IPS) Coarseness Factor: **62** Workability Factor: **36**



Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	100.0	0.0	0.0
3/4"	95.0	5.0	5.0
1/2"	72.3	22.8	27.7
3/8"	60.4	11.8	39.6
#4	42.6	17.8	57.4
#8	36.0	6.6	64.0
#16	29.5	6.5	70.5
#30	20.3	9.2	79.7
#50	9.5	10.8	90.5
#100	3.4	6.1	96.6
LBW	1.3	2.1	98.7

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Tuesday, June 18, 2024

Sample Id	Plant	Product	Specification	Sample Type	Time	100.0	100.0	100.0	100.0	100.0
-674890435	S11	7919 COARSE AGG P1M LS	Coarse Agg P1M LS Target	QA	07:15	100.0	100.0	100.0	100.0	100.0
-1101222887	S11	7920 INTERMED AGG P1M LS	Intermed Agg P1M LS Target	QA	07:15	100.0	100.0	100.0	100.0	100.0
-422764123	S11	1051 6AA LS	6AA LS	QA	07:20	100.0	100.0	100.0	100.0	100.0
-1989629670	S11	1022 2NS GR	2NS GR Spec	QA	07:40	100.0	96.1	84.5	69.7	50.0
-1989656313	S11	1067 26A Mod LS	26A Mod LS Spec	QA	07:50	100.0	89.7	74.5	14.4	5.2
		#16 (1.18mm)				1.7	3.7	2.1	2.1	3.5
		#30 (.6mm)				1.7	3.5	2.0	1.9	3.0
		#50 (.3mm)				1.6	3.3	1.9	1.8	2.6
		#100 (.15mm)				1.5	3.1	1.8	1.7	2.4
		#200 (75µm)				1.3	2.9	1.66	1.7	2.2
		Pan				0.0	0.0	0.00	0.0	0.0
		FM							2.69	
		Wash Loss (#200/75µm)				1.1	2.7	1.6	1.4	2.1
		Total Moisture				0.47	1.63	2.91	4.24	2.51

Aggregate Optimization Chart

Production Gradation Report

PLANT #: P-102

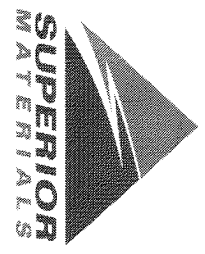
Sample Date: 6/17/24

Dates Test Represents: 6/18/2024 through 6/24/2024

Concrete Grade: DM, 4500HP

Contractor: _____

MDOT No.: _____



Superior Materials, LLC
 30701 W. 10 Mile Rd.
 Suite 500
 Farmington Hills, MI 48336

Agg. Class	Pit #	Source	Weight (ssd)	ft ³	Specific Gravity	Contribution %
6AA	58-003	Stonoco	1400	8.34	2.69	47.5
26A	58-003	Stonoco	400	2.38	2.69	13.6
2NS	63-114	Highland	1150	6.95	2.65	39.0
Total Wt						2950
						17.68
						100.0

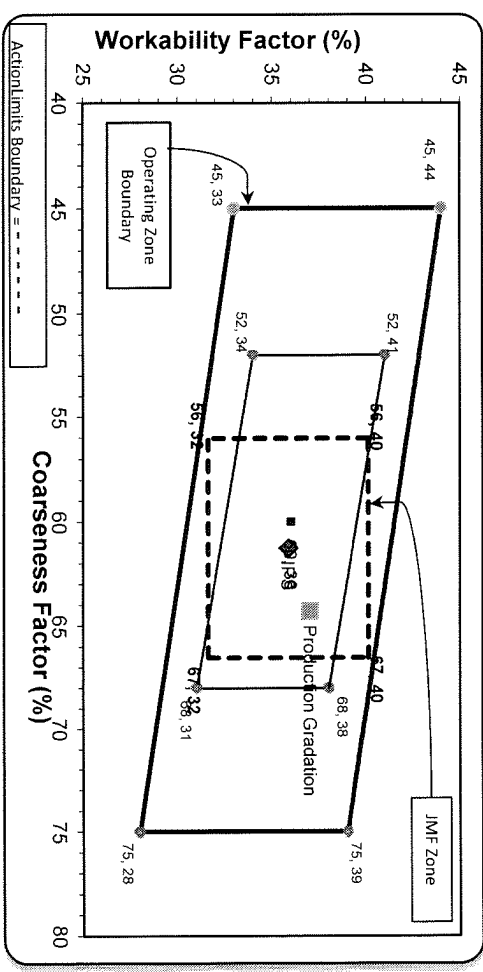
Sieve	6AA	26A	2NS	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	100.0	100.0	100.0	0.0	0.0
1.5"	100.0	100.0	100.0	100.0	0.0	0.0
1"	99.3	100.0	100.0	99.7	0.3	0.3
3/4"	69.5	100.0	100.0	85.5	14.1	14.5
1/2"	30.9	99.5	100.0	67.1	18.4	32.9
3/8"	14.4	89.1	100.0	57.9	9.2	42.1
#4	2.1	9.9	98.2	40.6	17.3	59.4
#8	1.2	3.4	85.9	34.5	6.1	65.5
#16	1.1	2.4	71.6	28.8	5.8	71.2
#30	1.0	2.1	54.1	21.8	6.9	78.2
#50	1.0	1.9	22.6	9.5	12.3	90.5
#100	0.9	1.9	3.9	2.2	7.3	97.8
LBW	0.6	1.8	1.1	1.0	1.2	99.0

Production Gradation Batch Plant Gradations Aggregate Supplier Gradations

Initial Production Sample (IPS)

Coarseness Factor: 64 **Workability Factor:** 35 **Adjusted WF:** 37.0

Coarseness Factor: 61 **Workability Factor:** 36

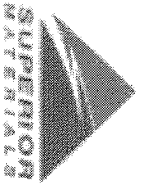


Sieve	Cumulative % Passing	% Retained	Cumulative % Retained
2"	100.0	0.0	0.0
1.5"	100.0	0.0	0.0
1"	99.3	0.7	0.7
3/4"	89.2	10.1	10.8
1/2"	70.7	18.5	29.3
3/8"	60.7	10.0	39.3
#4	44.4	16.3	55.6
#8	35.9	8.5	64.1
#16	27.3	8.6	72.7
#30	19.1	8.2	80.9
#50	7.4	11.7	92.6
#100	1.9	5.6	98.1
LBW	0.7	1.2	99.3

*Maximum % Retained must be above the 3/8" sieve.
 *Any two adjacent sieves must equal 10% except max.,
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for each sieve except max.,
 nom. max. #100 and #200 sieves.
 *% Retained must be at least 4% for the 3/4" sieve when
 a 1.5" max. size (nom. Max. 1.0") aggregate is used.

PREPARED BY:
 SM, LLC Technical Service

Approved By: _____



Daily Summary Report

Date Wednesday, June 19, 2024

Sample Id	-315824848	-1989616232	-315824905
Plant	S102 Superior Novi	S102 Superior Novi	S102 Superior Novi
Product	1051 6AA LS	1022 2NS GR	1067 26A Mod LS
Specification	6AA LS	2NS GR Spec	26A Mod LS Spec
Sample Type	QA	QA	QA
Time	09:39	10:00	10:10
2" (50mm)	100.0		100.0
1 1/2" (37.5mm)	100.0		100.0
1" (25mm)	99.3		100.0
3/4" (19mm)	69.5		100.0
1/2" (12.5mm)	30.9		99.5
3/8" (9.5mm)	14.4	100.0	89.1
#4 (4.75mm)	2.1	98.2	9.9
#8 (2.36mm)	1.2	85.9	3.4
#16 (1.18mm)	1.1	71.6	2.4
#30 (.6mm)	1.0	54.1	2.1
#50 (.3mm)	1.0	22.6	1.9
#100 (.15mm)	0.9	3.9	1.9
#200 (75µm)	0.83	1.2	1.9
Pan	0.00	0.0	0.0
FM		2.64	
Wash Loss (#200/75µm)	0.6	1.1	1.8
Total Moisture	3.00	3.88	3.59